
Bibliographical Miscellany—II. Bentham's specific names
based on habit of the plant

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Such strange specific names for plants as *centranthifolius*, *bartsiaefolia*, and *zizyphoroides* will come to the notice of even the casual student of the Californian flora for they present upon first sight a wholly unfamiliar, if indeed not unpronounceable, aspect. And, it may be wagered, the enigma will persist indefinitely (except with the mentally irritated) until such time as chance reading or conversation with an informed person supplies an explanation for them. Upon noting the author of these and many names of similar construction, it will be found that George Bentham (1800-1884) is often responsible for their proposal. Random notes on this phytographic device of Bentham, along with a few illustrative instances from the Californian flora and a postulated reason for its dextrous use by Bentham, may be of interest beyond the field of examples given, for this practice was carried widely into his descriptive botanical writings.

From his several analytical biographers¹ as well as from personal examinations of his terse descriptions, it may be easily discovered that Bentham was peculiarly gifted as a systematic botanist, with, as Joseph Dalton Hooker remarked, "method, grasp of subject, and thoroughness" as his "watchwords." Direct evidence of his attitude may be found in his own declaration of the principles of systematic botany prefaced to the "colonial floras" where, as in the *Flora Australiensis* (1863), he proposed that "descriptions should be *clear, concise, accurate and characteristic*." The importance of this last quality bears

¹ The best biography of Bentham with an estimation of his powers was written by Sir Joseph Dalton Hooker, embracing the materials of four earlier accounts apart from his close personal friendship with Bentham (*Ann. Bot.* 12: ix-xxx, with portrait. 1898).

upon the best possible choice of specific name for it introduces the "association" factor. A characteristic plant name brings to mind the singular features of habit or morphology of a species and aids in its subsequent ready recognition.

To Bentham species were characterful "individual plants" in a sense. And, to the end of designating species by alluding to a distinctive character, he commonly employed a name which would recall a genus or species, perhaps nearly or as often quite distantly related, distinctly simulating the plant in question. This simulation between species is commonly one of habit. "The habit of a plant," Bentham wrote, "consists of such general characters as strike the eye at first sight." Thus the distinctive habit of a newly described plant is emphasized by an allusion to that of a previously described genus or species, to be sure often not well known to the resident of the country in which the novelty grows: accordingly the allusion fails. Bentham described for example *Uranthus* (now united with *Eustoma*) *chironioides* (Pl. Hartw. 47, 1840) from Chico, (?) Hidalgo, Mexico, when *Chironia* (Gentianaceae), the genus alluded to, is wholly of Africa and Madagascar in its distribution and unfamiliar to the Mexican botanist. Similarly he named *Forestiera phillyreoides* (Benth.) Torr. from a Guanajuato collection, "phillyreoides" being reminiscent to Bentham of the wholly Old World oleaceous genus *Phillyrea*, but the name perhaps carries no intelligible meaning to the student of the Mexican flora. It will be seen however that an examination of the materials of these comparable genera shows, as will be seen in certain examples given beyond, striking resemblances and it is easy to see how a phytographer familiar with several floras of the world, as was Bentham, would draw such comparisons in his choice of specific names. It will be noted that Karl Sigismund Kunth (1788-1850) and the DeCandolles employed this device of specific naming perhaps even before Bentham, as indeed it goes back to the time of Linnaeus in a somewhat different and less pronounced way, but it is in the writings of Bentham that it proves "characteristic."

The amount of descriptive work accomplished by Bentham was truly enormous. Thus his contributions to DeCandolle's *Prodromus* alone involved, according to Hooker, the descriptions of 4,730 species. And this, it will be remembered, embraced

but five families in that work, viz. Ericaceae, Polemoniaceae, Scrophulariaceae, and Labiatae, and constituted but one of his several major labors. It is to Bentham's world-wide familiarity with plant families and their finer composition, crystallized in his co-authorship with Hooker of the *Genera Plantarum*, that this fresh approach to the naming of plant species is probably due in a large measure. This cosmopolitan familiarity, then, coupled with his rule of designating *characteristic* attributes of a species, especially of habit, has given rise to such unfaded botanical names as are otherwise infrequent in the annals of descriptive botany.

If some instances of this practice are examined in the light of the plants referred to by such alluding specific names, the precision of choice on Bentham's part becomes evident. Of the several examples that have come to notice among the plants of California described by Bentham there may be listed the following from the three families, Polemoniaceae, Labiatae, and Scrophulariaceae:

(a) *Aegochloa* (*Navarretia*) *atractyloides* Benth. Refers to the composite genus *Atractylis* of the Mediterranean region and temperate Asia, numbering some fifteen species. The Mediterranean *Atractylis cancellata* L. is suggestive of the Californian *Navarretia* in habit and congested inflorescence though the heads in the composite are larger.

(b) *Gilia pharnaceoides* Benth. Alludes to the resemblance of habit to the genus *Pharnaceum* of the Aizoaceae of South Africa. Particularly does the *Gilia* species recall the habit of *Pharnaceum dichotomum* L.f. In that species the arrangement and shape of the leaves is very close.

(c) *Pogogyne zizyphoroides* Benth. The habit recalls another menthaceous genus *Zizyphora* of the Mediterranean region and central Asia, especially such species as *Zizyphora tenuior* L. of Persia which has the flowers arranged in close-set "verticellasters" in the manner of the Californian *Pogogyne*.

(d) *Stachys ajugoides* Benth. Habit suggestive of the Old World labiate genus *Ajuga* which Bentham characterized as "herbae annuae, perennes vel vix basi suffruticosae, saepe procumbentes vel adscendentes, nunc stoloniferae" (Lab. Gen. et Sp. 690. 1835). It is this "procumbent" aspect which characterizes the Californian *Stachys*. This species has been variously

misunderstood but it is a low, few-branched and lightly spreading plant of the coastal marshes and does not penetrate far from the coast. This singular habit among the Californian species is aptly recorded in Bentham's name.

Other Californian Labiatae species named by Bentham which carry recognizable specific names of this type are *Scutellaria antirrhinoides*, *Lophanthus (Agastache) urticifolius*, *Salvia carduacea*, *Audibertia stachyoides*, and *Calamintha mimuloides*. Bentham explains his unusual choice of name for *Salvia columbariae* with the phrase "habitus fere *Scabiosa columbariae*." *Scabiosa columbaria* L. is a Mediterranean species with a thin cluster of basal leaves of a pinnatifid filagree nature and capitate inflorescence, all calling to mind the Californian Chia.

(e) *Collinsia bartsiaefolia* Benth. Alludes to the resemblance of its leaves, diagnostic for this species, to the genus *Bartsia* (or *Bartschia*) numbering some thirty species in South America, Europe and Africa. The Californian *Collinsia* resembles *Bartsia versicolor* Pers. in habit, inflorescence and leaf-margin, although the whole genus apparently exhibits the *crenulate* character of the leaf which uniformly distinguishes the well-marked *Collinsia*.

(f) *Penstemon centranthifolius* Benth. Alludes to a small European genus of Valerianaceae, *Centranthus*, and probably precisely to the Mediterranean *Centranthus ruber* DC. with which it perfectly agrees in the leaf shape and the firmness and glabrous character of the foliage making up its distinct habit. The leaves are sessile in the manner of the *Penstemon* and borne in the same ascending fashion.

To Bentham's observation that "the aptness of a botanical description, like the beauty of a work of imagination, will always vary with the style and genius of the author" may be added aptness in choice of species names, an art in which he was significantly proficient.

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